Benjamin C. Craft, III, Ph.D.

Benjamin Cole Craft, III, Ph.D., Associate Director of the J. Bennett Johnston, Sr. Center for Advanced Microstructures and Devices (CAMD) at Louisiana State University, died in Houston, Texas on Monday, December 30, 2002. Dr. Craft was known internationally for his work in accelerator physics and particularly for his work in building synchrotron-light sources for use in micro fabrication and scientific research. He was 47.

Benjamin Cole Craft, III was born January 6, 1955 in Baton Rouge, Louisiana. He lived with his family first in Baton Rouge and then later in Lafayette before entering Texas A&M University in 1972. In 1976 he received, with honors, bachelor's degrees in both physics and mathematics. While a student, he worked as a research assistant at the Cyclotron Institute, held a 2-year Welch Foundation Fellowship at the Molecular Ion Laboratory, and taught self-paced engineering and scientific physics to other undergraduates. He was a Texas A&M Distinguished Student, a member of the Phi Eta Sigma Freshman Honor Society, and a Summer Scholar. During his freshman year he was also a member of the Corps of Cadets and the Fightin' Texas Aggie Band.

In 1977, he entered the doctoral program in nuclear physics at the Massachusetts Institute of Technology (MIT) and began working as a graduate research assistant at MIT's William H. Bates Linear Accelerator Laboratory, a position he held until receiving his Ph.D. in 1982. His thesis topic involved studies of the photo-disintegration of the deuteron using gamma rays in the energy range from 50 to 350 MeV. His thesis advisor was Prof. June Matthews, who now serves as the director of the Laboratory of Nuclear Studies (LNS) at MIT. He was elected to Sigma Xi, the Scientific Research Society, while at MIT.

After graduating from MIT, Dr. Craft worked briefly in Austin as a software engineer, then returned to MIT's Bates Linear Accelerator Laboratory in 1983 for a 1-year appointment. In addition to his scientific responsibilities at Bates, he led a software group developing an automated control system for the accelerator.

From 1984 until 1988, Dr. Craft worked at the National Synchrotron Light Source (NSLS) at Brookhaven National Laboratory in Upton, New York. As a member of the Accelerator Physics group, he served a dual assignment as NSLS x-ray ring manager during a period when substantial facility upgrades were underway. He also pursued an additional assignment to the NSLS Radio Frequency group; in that capacity, he was responsible for conducting innovative work on radio frequency systems at the NSLS.

In 1988, Dr. Craft left Brookhaven to help create the J. Bennett Johnston, Sr. Center for Advanced Microstructures and Devices (CAMD) at Louisiana State University. CAMD is

a synchrotron-radiation research center whose mission is to provide equipment, expertise, and infrastructure for research and development in microstructures and micro devices and for experiments in biology, materials, and the environmental sciences requiring deep-ultraviolet and X-ray spectroscopy. In 1988, with the financial and intellectual support of the US Department of Energy and scientists and engineers at its national laboratories, CAMD provided the opportunity, for the first time, for a private company in the United States to build a complete storage ring for use as a synchrotron light source. Dr. Craft was a crucial member of the team that selected the high-tech contractor for this $20-million project and was solely responsible for overseeing the specification, fabrication, installation, and commissioning of the accelerator components and computer control system.

After the CAMD accelerators came online in 1992, Dr. Craft remained on staff as head of accelerator operations and development. In this capacity he was responsible for supervising the maintenance and almost constant upgrade of the complex electrical, electronic, and mechanical parts of the CAMD accelerators. At the time of his death he was also Co-Principal Investigator for an NIH/NSF grant for the design, construction, and installation of a new synchrotron-radiation protein-crystallography beamline to be used at CAMD for molecular-biological and medical research.

Over the course of his career, Dr. Craft authored or co-authored 35 scientific papers and invited presentations at national and international symposia. He holds a patent for an improvement to an important device used in synchrotron-light sources. He was a member of the American Physical Society, the American Association for the Advancement of Science, the Institute of Electrical and Electronics Engineers, and the Society of Photo-Optical Instrumentation Engineers

From the standpoint of areas of intellectual interest, Dr. Craft was happiest when working on problems that required computer programming, mathematics, systems control, and deep thinking. He greatly enjoyed collaborating with other accelerator physicists in considering new developments and applications for accelerators, especially when these would benefit sciences and technologies outside physics (*e.g.,* medicine, micro fabrication, materials science, molecular biology). He took pleasure in helping scientists and engineers at other synchrotron-radiation facilities by advising them on the construction and installation of new light sources. He also enjoyed teaching others, including both highly experienced physicists and less experienced undergraduate and graduate students. He will be greatly missed by all of those whose lives he touched, including colleagues, students, family, and friends.

Dr. Craft was preceded in death by his grandparents, Bertha L. and Benjamin C. Craft, Sr. of Baton Rouge. As head of the Department of Petroleum Engineering at Louisiana State University, Benjamin C. Craft, Sr. established an academic tradition as both a professor and an author which his grandson ardently upheld.

Survivors: Father, Benjamin C. Craft, Jr., of Houston, Texas; mother, Carolyn Daniels Stottlemyer of Redwood City, California; brother, Daniel P. Craft of Denver, Colorado; stepmother, Ann Cornell of Lafayette, Louisiana; uncle and aunt, F. Baron and Charlotte Craft of Houston; cousins Claudia Craft Huthnance, Sharon Craft, and Baron Craft, Jr., all of Houston; and aunt Paula Daniels Duffaut and family, all of Los Alamitos, California.